Type	Market Cap	Side	Market	Size	Momentum
All	All (A)	All (A)	All (A)	All	All
Growth	Large (L)	Buy (B)	Listed (N)	$\leq 1\%$	≤ -0.1
Value	Mid (M)	Sell (S)	OTC (Q)	(1,5]%	(-0.1,-0.02]
Micro-Cap	Small (S)			(5,10]%	(-0.02,0.02]
				(10,25]%	(0.02,0.1]
				(25,50]%	> 0.1
				$> 50\%$	

Table 1: Values, ranges and codes of categories used in PGD.

Fig. 1

Category	No. Trades (in mill.)	No. Orders (in mill.)	Dollar Value (in bill.)	No. Shares (in bill.)	No. Stocks
All	14.6	6.4	2,105	82.7	11,288
Type					
Growth	10.0	4.3	1,484	58.0	4,686
Value	9.1	4.1	1,307	51.4	5,104
Micro cap	0.2	0.1	9.3	1.2	5,658
Market Cap					
Large cap	4.2	2.2	1,116	33.2	500
Mid cap	5.3	2.3	698	28.6	1,842
Small cap	5.1	1.9	289	20.9	9,998
Side					
Buy	7.8	3.5	1,050	41.1	10,722
Sell	6.8	2.9	1,054	41.6	10,004
Market					
Listed	9.1	4.5	1,625	55.7	4,838
OTC	5.5	2.0	479	27.0	6,524
Size					
$\leq 1\%$	12.7	5.2	706	25.4	8,486
$(1, 5]\%$	1.2	0.7	610	23.0	9,582
$(5, 10]\%$	0.3	0.2	286	11.2	9,402
$(10, 25]\%$	0.2	0.2	294	12.1	9,622
$(25, 50]\%$	0.07	0.07	113	5.2	8,758
$> 50\%$	0.05	0.05	95	5.8	8006
Momentum					
≤ -0.1	1.1	0.5	103	5.5	10,136
$(-0.1, -0.02]$	4.3	1.9	643	26.1	8,708
$(-0.02, 0.02]$	4.5	2.0	712	26.4	8,368
$(0.02, 0.1]$	3.8	1.7	565	20.9	8,656
> 0.1	0.9	0.4	81.7	3.7	9,906

Table 2: Number of executions, orders, shares, stocks and dollar volume for various categories of the sample.

Fig. 2

Category	C_{T-1}	V_T	C_{T-1}	C_{T-20}	Q_T	M_T
All	-39 (-22)	-7 (-4)	2 (6)	-11 (-22)	-31 (-20)	-5 (-4)
Type						
Growth	-42 (-24)	-7 (-4)	1 (8)	-11.6 (-20)	-33 (-20)	-5 (-3)
Value	-37 (-16)	-8 (-3)	4 (2)	1 (-24)	-29 (-16)	-5 (-4)
Micro cap	-87 (-78)	-14 (-19)	7 (2)	5 (-68)	-68 (-78)	-20 (-31)
Market Cap						
Large cap	-31 (-17)	-6 (-3)	-1 (1)	1 (-11)	-25 (-14)	-4 (-1)
Mid cap	-44 (-13)	-8 (-3)	2 (7)	-14 (-5)	-33 (-11)	-6 (-2)
Small cap	-55 (-36)	-9 (-6)	11 (8)	-46 (-50)	-46 (-33)	-4 (-7)
Side						
Buy	23 (6)	-7 (-7)	-21 (-19)	-356 (-384)	0 (-3)	-3 (-5)
Sell	-100 (-54)	-8 (-1)	24 (33)	333 (388)	-61 (-39)	-6 (-2)
Market						
Listed	-29 (-13)	-7 (-2)	0 (3)	-8 (-22)	-24 (-13)	-5 (-2)
OTC	-70 (-36)	-10 (-7)	5 (9)	-20 (-22)	-52 (-31)	-4 (-5)
Size						
$\leq 1\%$	-30 (-21)	-5 (-4)	2 (5)	-20 (-23)	-22 (-18)	-4 (-3)
$(1, 5]\%$	-36 (-25)	-7 (-6)	4 (8)	8 (-19)	-27 (-24)	-6 (-11)
$(5, 10]\%$	-41 (-30)	-8 (-8)	0 (7)	5 (-11)	-31 (-29)	-7 (-13)
$(10, 25]\%$	-46 (-35)	-8 (-10)	0 (4)	-5 (-11)	-35 (-34)	-5 (-14)
$(25, 50]\%$	-72 (-46)	-14 (-12)	5 (9)	-65 (-14)	-58 (-43)	2 (-14)
$> 50\%$	-54 (-65)	-17 (-24)	-11 (2)	-71 (33)	-74 (-65)	-6 (-22)
Momentum						
≤ -0.1	-32 (-32)	-7 (-7)	2 (11)	-29 (-48)	-28 (-34)	-4 (-9)
$(-0.1, -0.02]$	-47 (31)	-7 (-4)	1 (11)	30 (-15)	-35 (-24)	-6 (-3)
$(-0.02, 0.02]$	-37 (-17)	-7 (-4)	0 (4)	-31 (-13)	-29 (-16)	-5 (-3)
$(0.02, 0.1]$	-34 (-15)	-8 (-3)	3 (1)	-25 (-30)	-30 (-14)	-4 (-4)
> 0.1	-33 (-22)	-8 (-5)	5 (0)	-40 (-42)	-26 (-23)	-6 (-7)

Table 3: Average trading costs (in basis point) for various categories and benchmarks of the sample, where equally weighted averages are shown in brackets.

Fig. 3

Category	C_T	V_T	C_{T-1}	C_{T-20}	O_T	M_T
All	-70 (-22)	-27 (-13)	9 (0)	-3 (-26)	-58 (-22)	-75 (-34)
Type						
Growth	-74 (-22)	-26 (-13)	12 (0)	-3 (-26)	-59 (-21)	-72 (-35)
Value	-68 (-19)	-27 (-11)	1 (-2)	6 (-27)	-58 (-19)	-75 (-28)
Micro cap	-216 (-134)	-105 (-69)	17 (-24)	27 (-32)	-182 (-134)	-190 (-152)
Market Cap						
Large cap	-44 (-9)	-13 (-4)	6 (2)	7 (2)	-37 (-8)	-48 (-13)
Mid cap	-79 (-8)	-33 (-7)	19 (2)	-15 (-21)	-66 (-9)	-83 (-26)
Small cap	-79 (-8)	-33 (-7)	19 (2)	-15 (-21)	-66 (-9)	-83 (-26)
Side						
Buy	41 (8)	16 (-12)	-107 (-34)	-335 (-328)	21 (-3)	-51 (-29)
Sell	-181 (-57)	-69 (-14)	124 (39)	327 (332)	-137 (-44)	-98 (-40)
Market						
Listed	-54 (-15)	-20 (-9)	1 (-1)	1 (-23)	-47 (-15)	-63 (-22)
OTC	-125 (-37)	-48 (-23)	35 (0)	-14 (-33)	-97 (-36)	-101 (-57)
Size						
$\leq 1\%$	-32 (-11)	-11 (-8)	2 (-1)	-18 (-30)	-26 (-12)	-32 (-22)
$(1,5]\%$	-56 (-58)	-20 (-29)	6 (0)	13 (-24)	-46 (-54)	-52 (-72)
$(5,10]\%$	-71 (-73)	-26 (-36)	11 (5)	32 (8)	-59 (-69)	-67 (-94)
$(10,25]\%$	-78 (-83)	-30 (-40)	4 (0)	14 (6)	-67 (-78)	-85 (-110)
$(25,50]\%$	-76 (-98)	-16 (-47)	-12 (-8)	-28 (7)	-61 (-91)	-106 (-146)
$> 50\%$	-139 (-132)	-68 (-77)	47 (-1)	-44 (41)	-115 (-125)	-150 (-210)
Momentum						
≤ -0.1	-102 (-51)	-62 (-32)	11 (-6)	-38 (-94)	-99 (-55)	-131 (-70)
$(-0.1,-0.02]$	-80 (-26)	-29 (-13)	0 (-2)	11 (-18)	-67 (-23)	-78 (-34)
$(-0.02,0.02]$	-67 (-13)	-21 (-8)	24 (1)	-16 (-10)	-49 (-13)	-66 (-25)
$(0.02,0.1]$	-57 (-18)	-24 (-11)	0 (1)	7 (-31)	-52 (-18)	-70 (-31)
> 0.1	-84 (-34)	-37 (-22)	11 (2)	-15 (-51)	-71 (-36)	-106 (-60)

Table 4: Order based dollar and equally weighted a Average trading costs (in basis points) for various categories and benchmarks of the sample, where equally weighted averages are in brackets.

Fig. 4

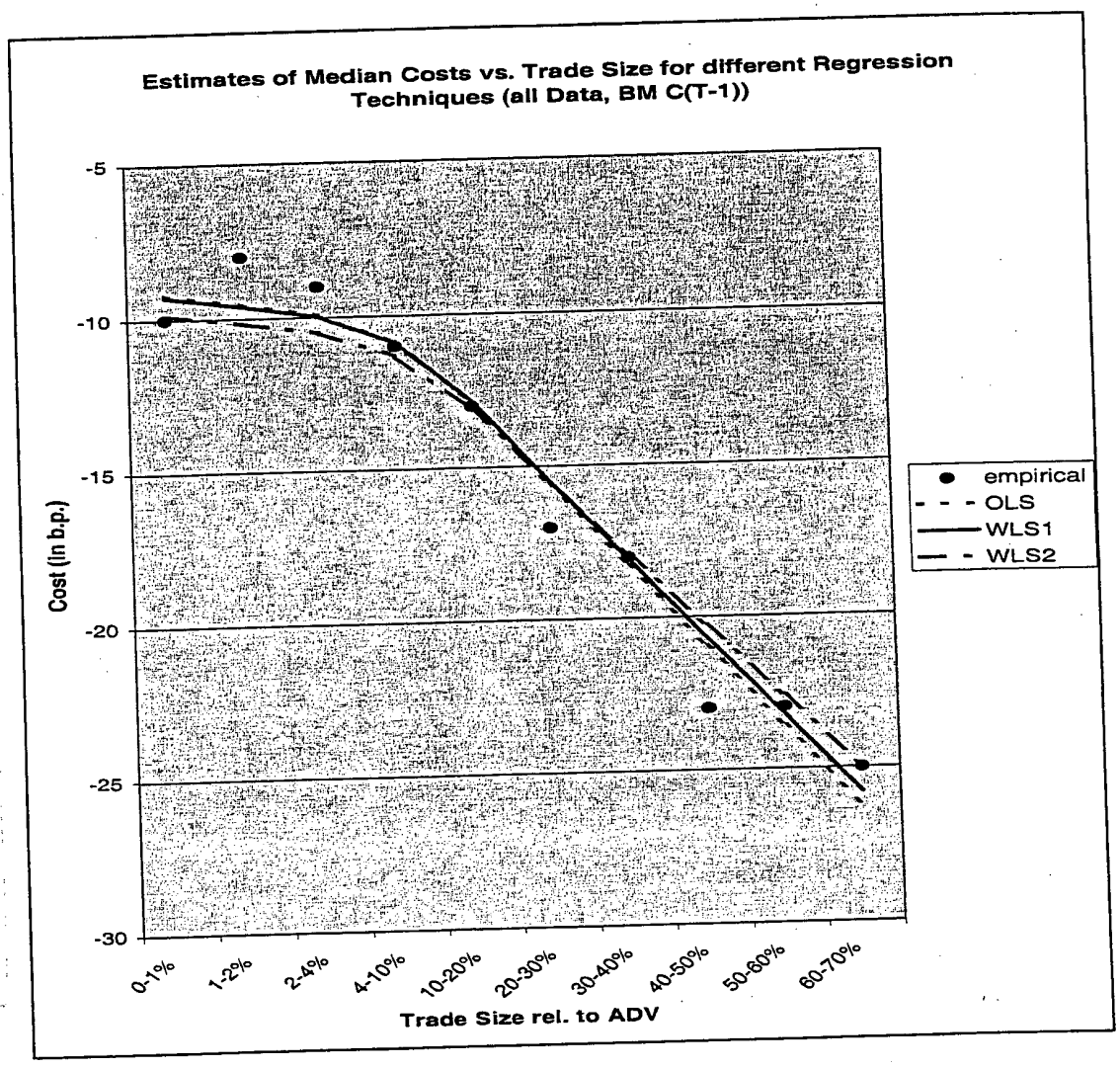
Estimates of Median Costs vs. Trade Size for different Regression Techniques (all Data, BM C(T-1))
Cost (in b.p.)
-5
-10
-15
-20
-25
-30
0-1%
1-2%
2-4%
4-10%
10-20%
20-30%
30-40%
40-50%
50-60%
60-70%
Trade Size rel. to ADV
empirical
OLS
WLS1
WLS2

Fig. 5

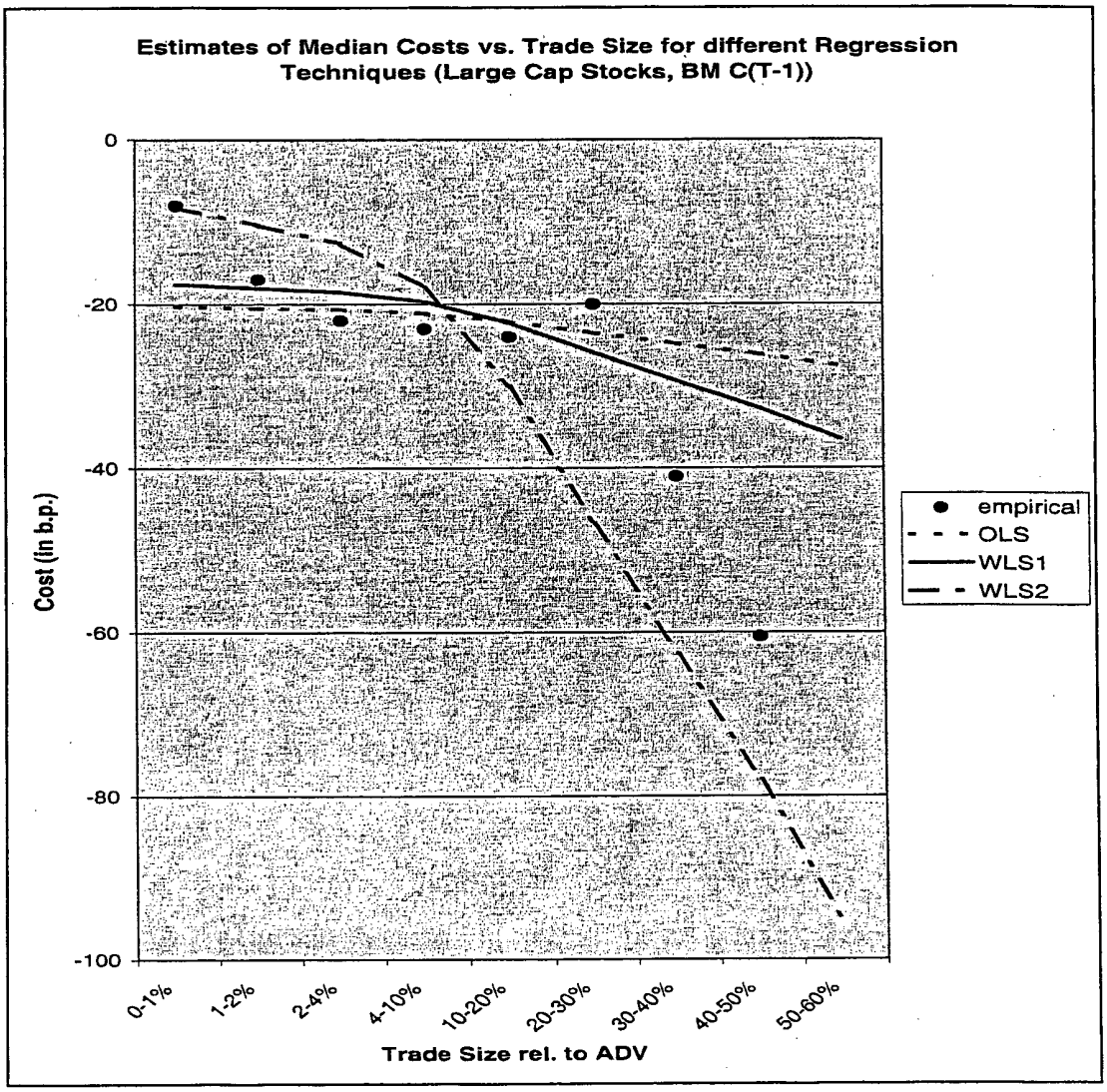
Estimates of Median Costs vs. Trade Size for different Regression Techniques (Large Cap Stocks, BM C(T-1))
0
-20
-40
-60
-80
-100
Cost (in b.p.)
empirical
OLS
WLS1
WLS2
0-1%
1-2%
2-4%
4-10%
10-20%
20-30%
30-40%
40-50%
50-60%
Trade Size rel. to ADV

Fig. 6

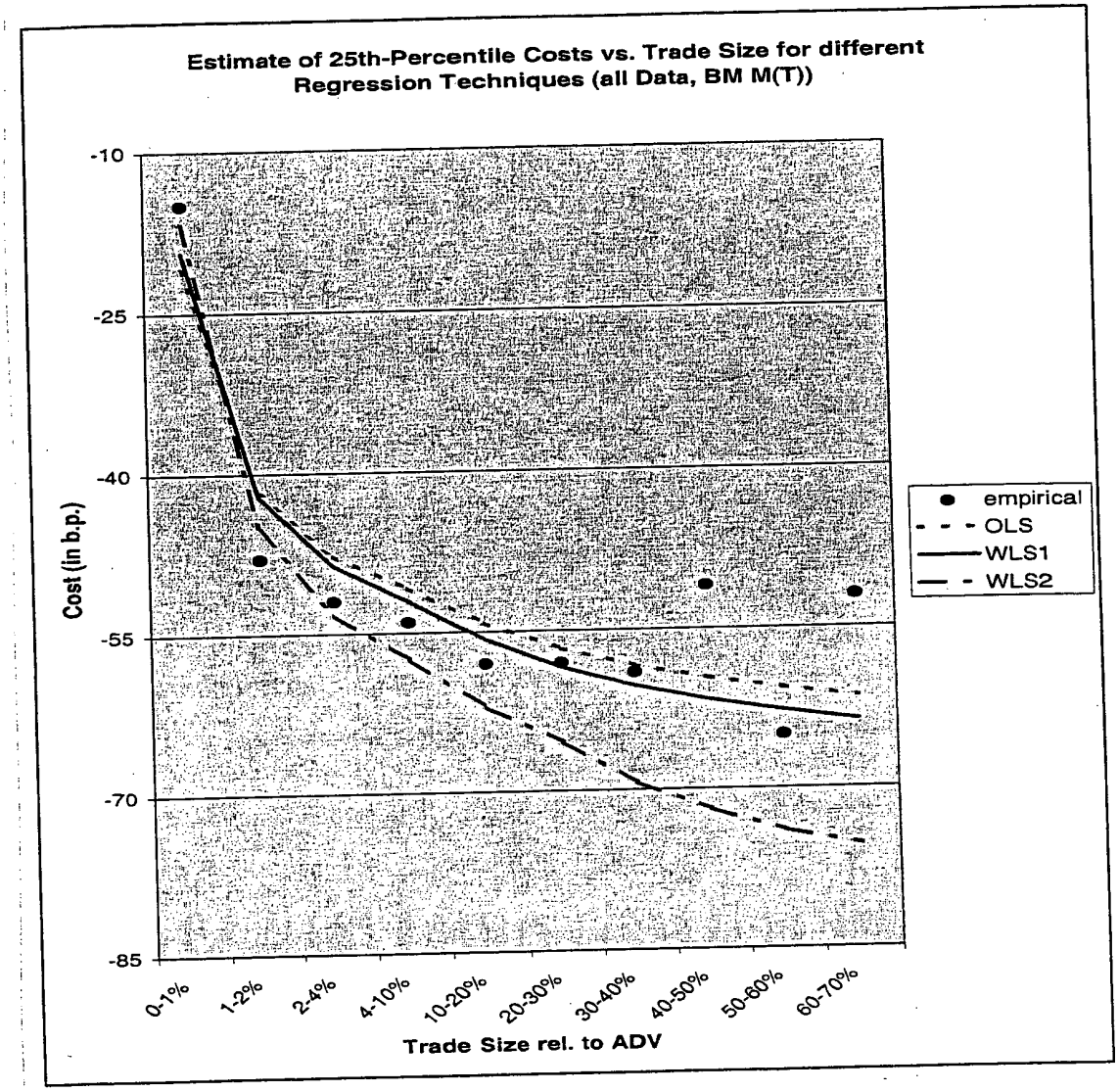
Estimate of 25th-Percentile Costs vs. Trade Size for different Regression Techniques (all Data, BM M(T))
-10
-25
-40
-55
-70
-85
Cost (in b.p.)
0-1%
1-2%
2-4%
4-10%
10-20%
20-30%
30-40%
40-50%
50-60%
60-70%
Trade Size rel. to ADV
empirical
OLS
WLS1
WLS2

Fig. 7

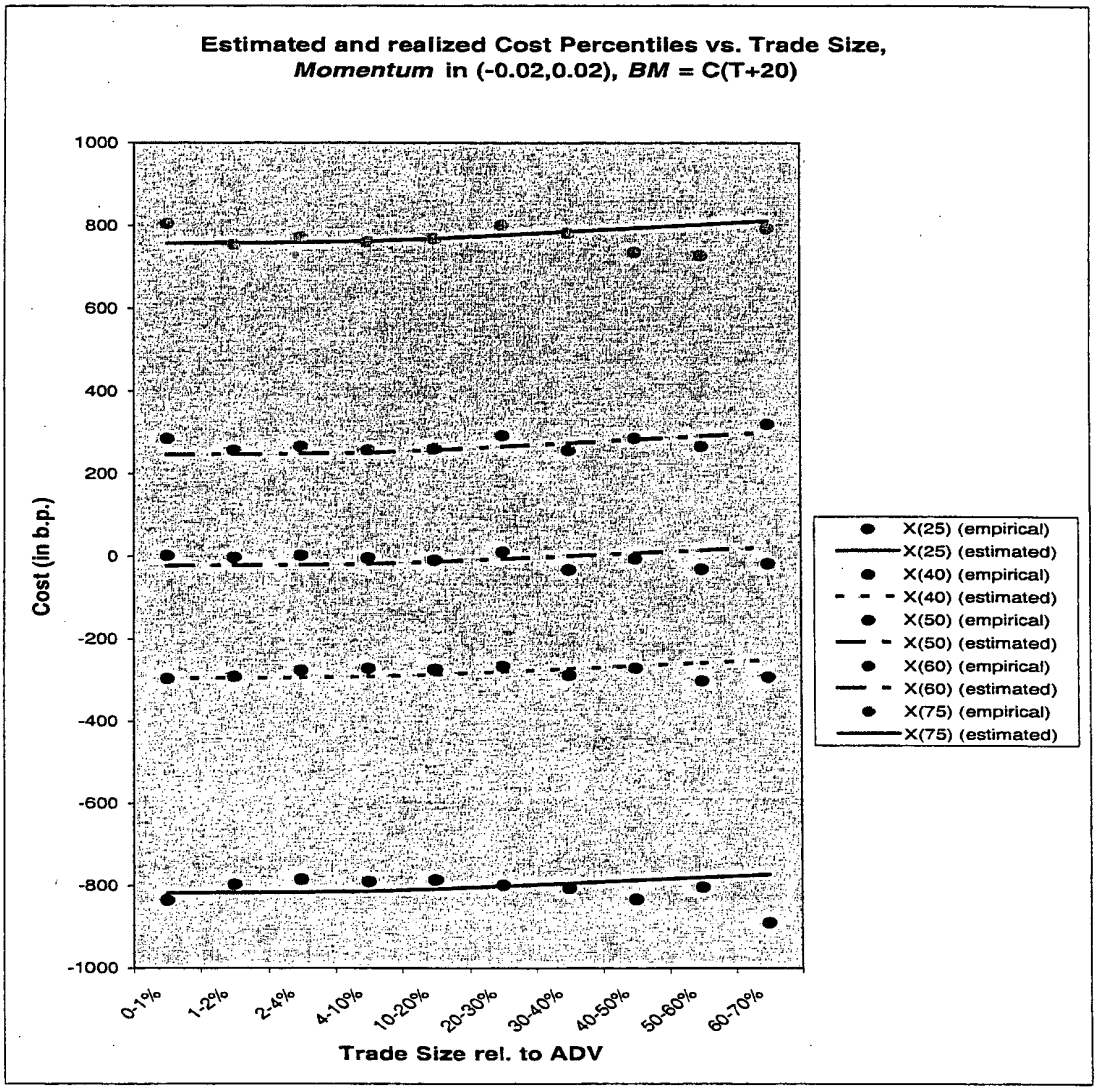
Estimated and realized Cost Percentiles vs. Trade Size,
Momentum in (-0.02,0.02), BM = C(T+20)
Cost (in b.p.)
1000
800
600
400
200
0
-200
-400
-600
-800
-1000
0-1%
1-2%
2-4%
4-10%
10-20%
20-30%
30-40%
40-50%
50-60%
60-70%
Trade Size rel. to ADV
X(25) (empirical)
X(25) (estimated)
X(40) (empirical)
X(40) (estimated)
X(50) (empirical)
X(50) (estimated)
X(60) (empirical)
X(60) (estimated)
X(75) (empirical)
X(75) (estimated)

Fig. 8

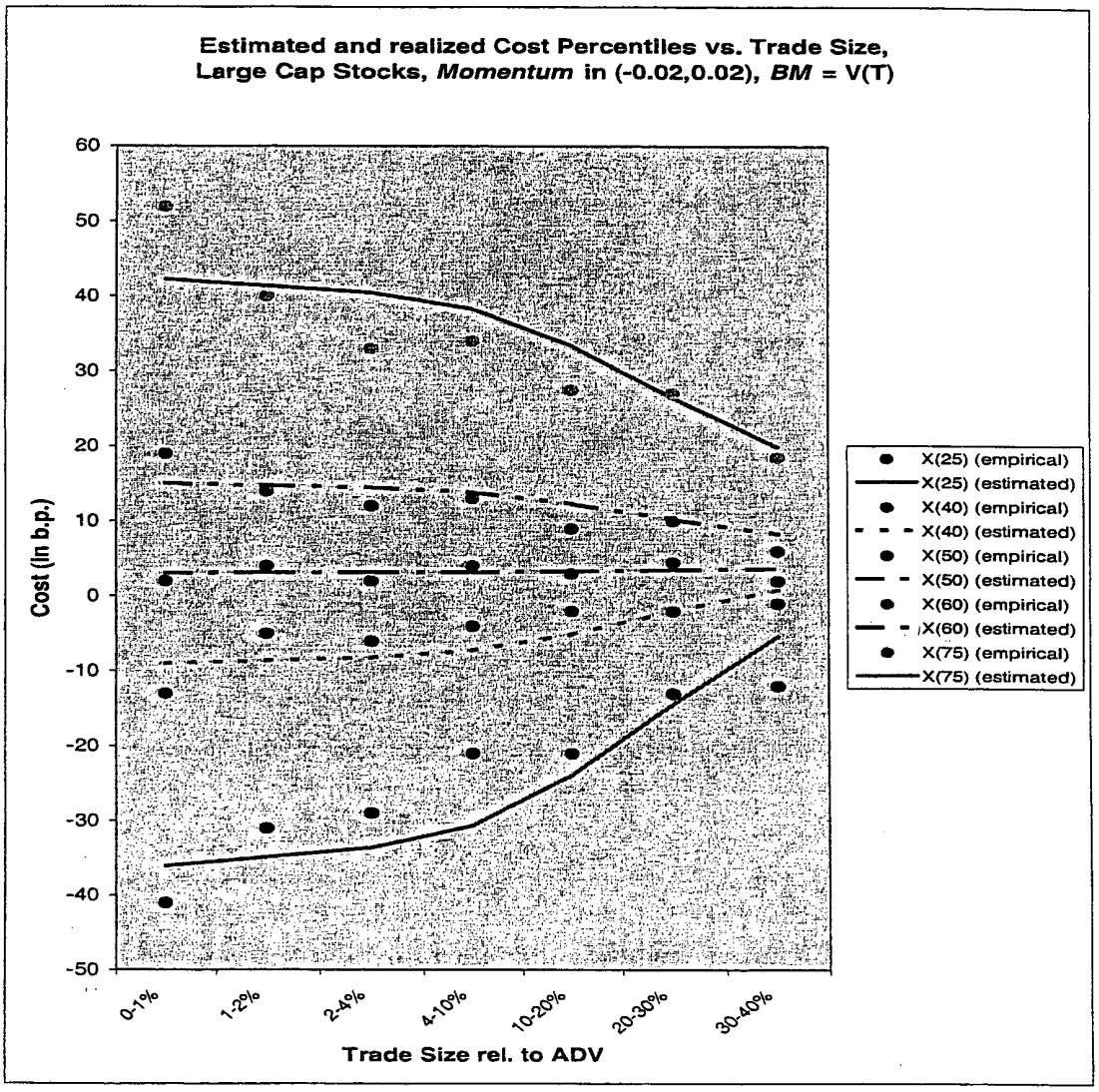
Estimated and realized Cost Percentiles vs. Trade Size,
Large Cap Stocks, Momentum in (-0.02,0.02), BM = V(T)
Cost (in b.p.)
60
50
40
30
20
10
0
-10
-20
-30
-40
-50
0-1%
1-2%
2-4%
4-10%
10-20%
20-30%
30-40%
Trade Size rel. to ADV
X(25) (empirical)
X(25) (estimated)
X(40) (empirical)
X(40) (estimated)
X(50) (empirical)
X(50) (estimated)
X(60) (empirical)
X(60) (estimated)
X(75) (empirical)
X(75) (estimated)

Fig. 9

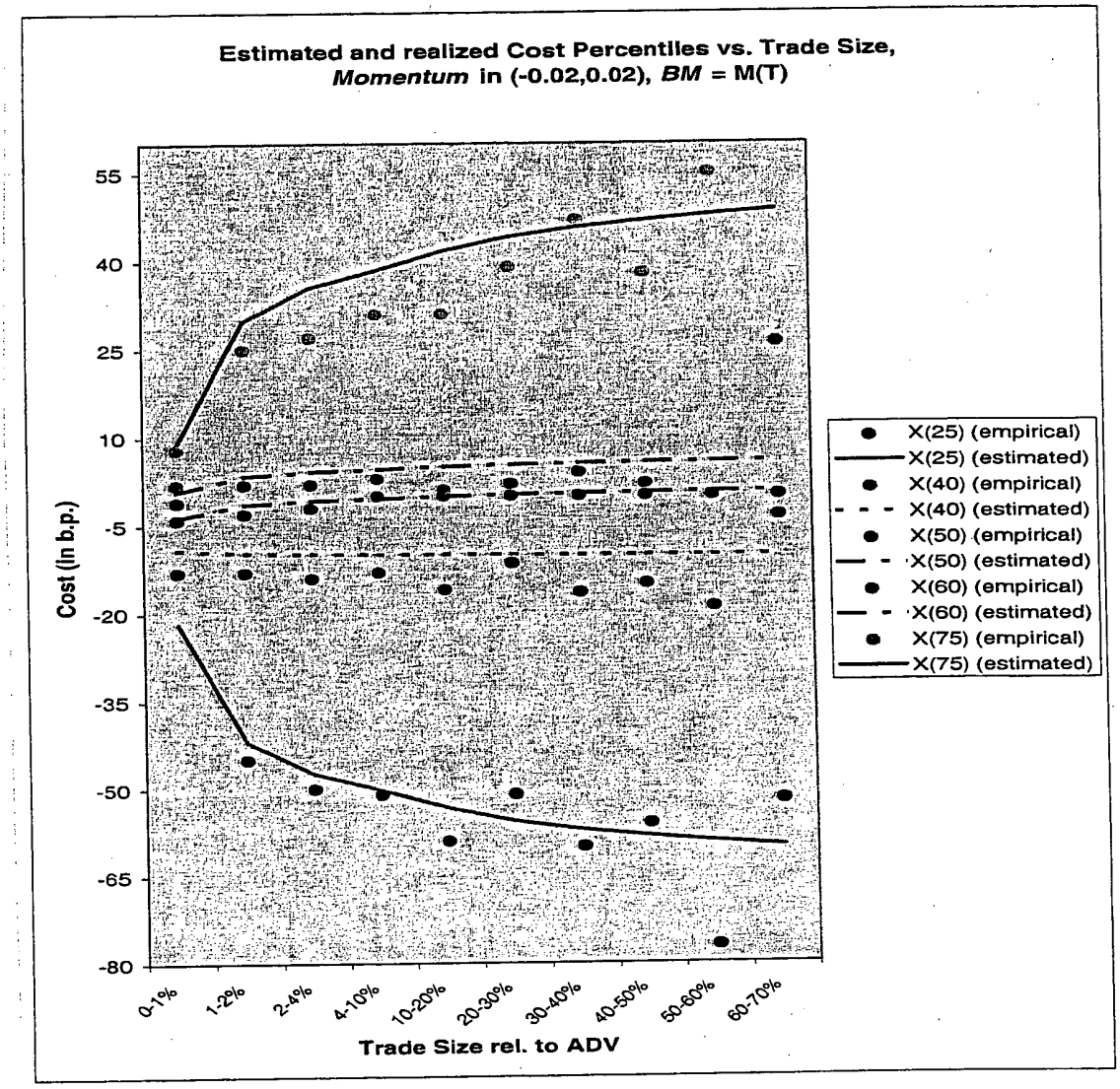
Estimated and realized Cost Percentiles vs. Trade Size,
Momentum in (-0.02,0.02), BM = M(T)
Cost (in b.p.)
55
40
25
10
-5
-20
-35
-50
-65
-80
0-1%
1-2%
2-4%
4-10%
10-20%
20-30%
30-40%
40-50%
50-60%
60-70%
Trade Size rel. to ADV
X(25) (empirical)
X(25) (estimated)
X(40) (empirical)
X(40) (estimated)
X(50) (empirical)
X(50) (estimated)
X(60) (empirical)
X(60) (estimated)
X(75) (empirical)
X(75) (estimated)

Fig. 10

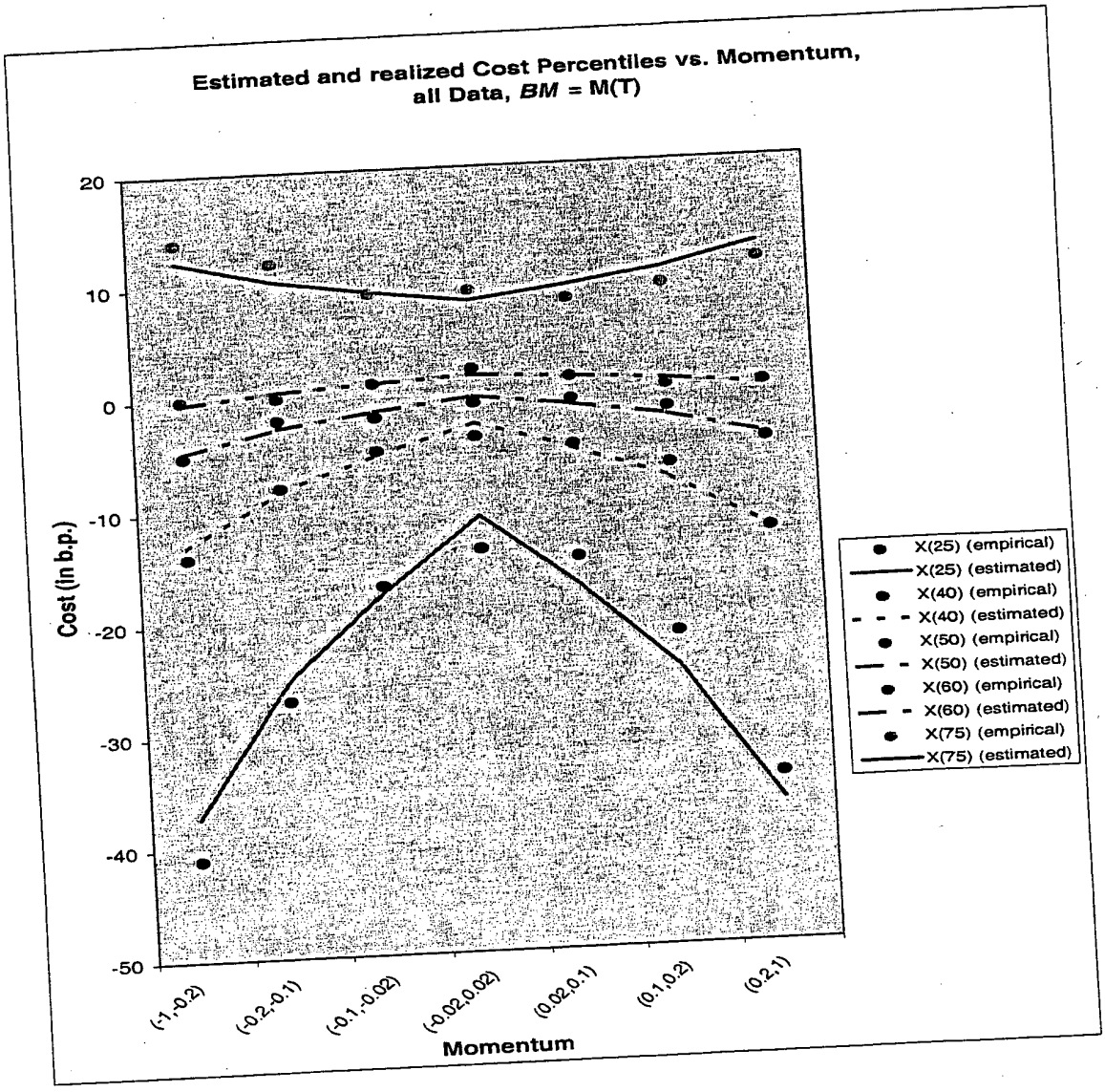
Estimated and realized Cost Percentiles vs. Momentum, all Data, BM = M(T)
Cost (in b.p.)
20
10
0
-10
-20
-30
-40
-50
(-1,-0.2)
(-0.2,-0.1)
(-0.1,-0.02)
(-0.02,0.02)
(0.02,0.1)
(0.1,0.2)
(0.2,1)
Momentum
X(25) (empirical)
X(25) (estimated)
X(40) (empirical)
X(40) (estimated)
X(50) (empirical)
X(50) (estimated)
X(60) (empirical)
X(60) (estimated)
X(75) (empirical)
X(75) (estimated)

Fig. 11

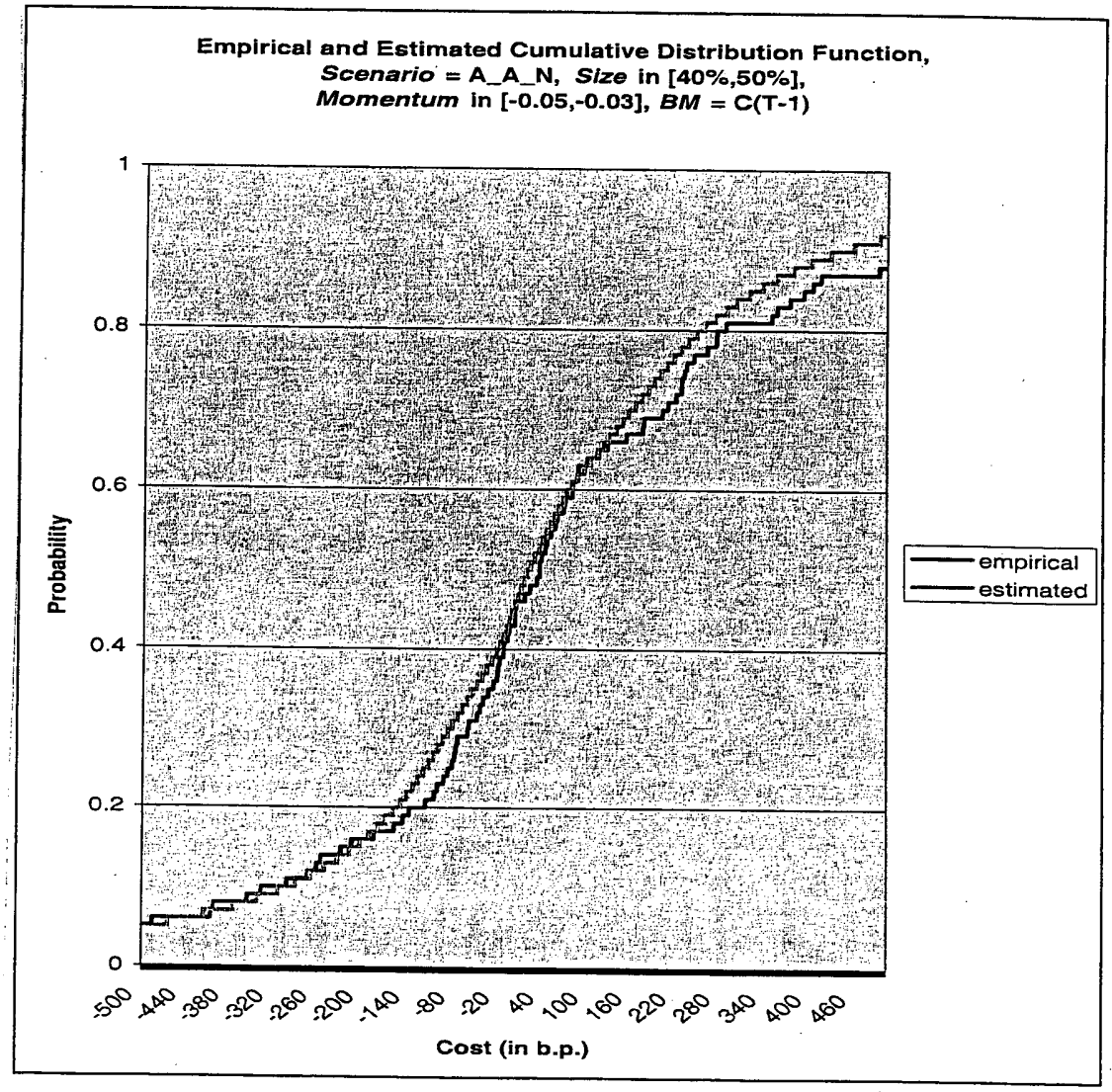
Empirical and Estimated Cumulative Distribution Function,
Scenario = A_A_N, Size in [40%,50%],
Momentum in [-0.05,-0.03], BM = C(T-1)
Probability
1
0.8
0.6
0.4
0.2
0
-500
-440
-380
-320
-260
-200
-140
-80
-20
40
100
160
220
280
340
400
460
Cost (in b.p.)
empirical
estimated

Fig. 12

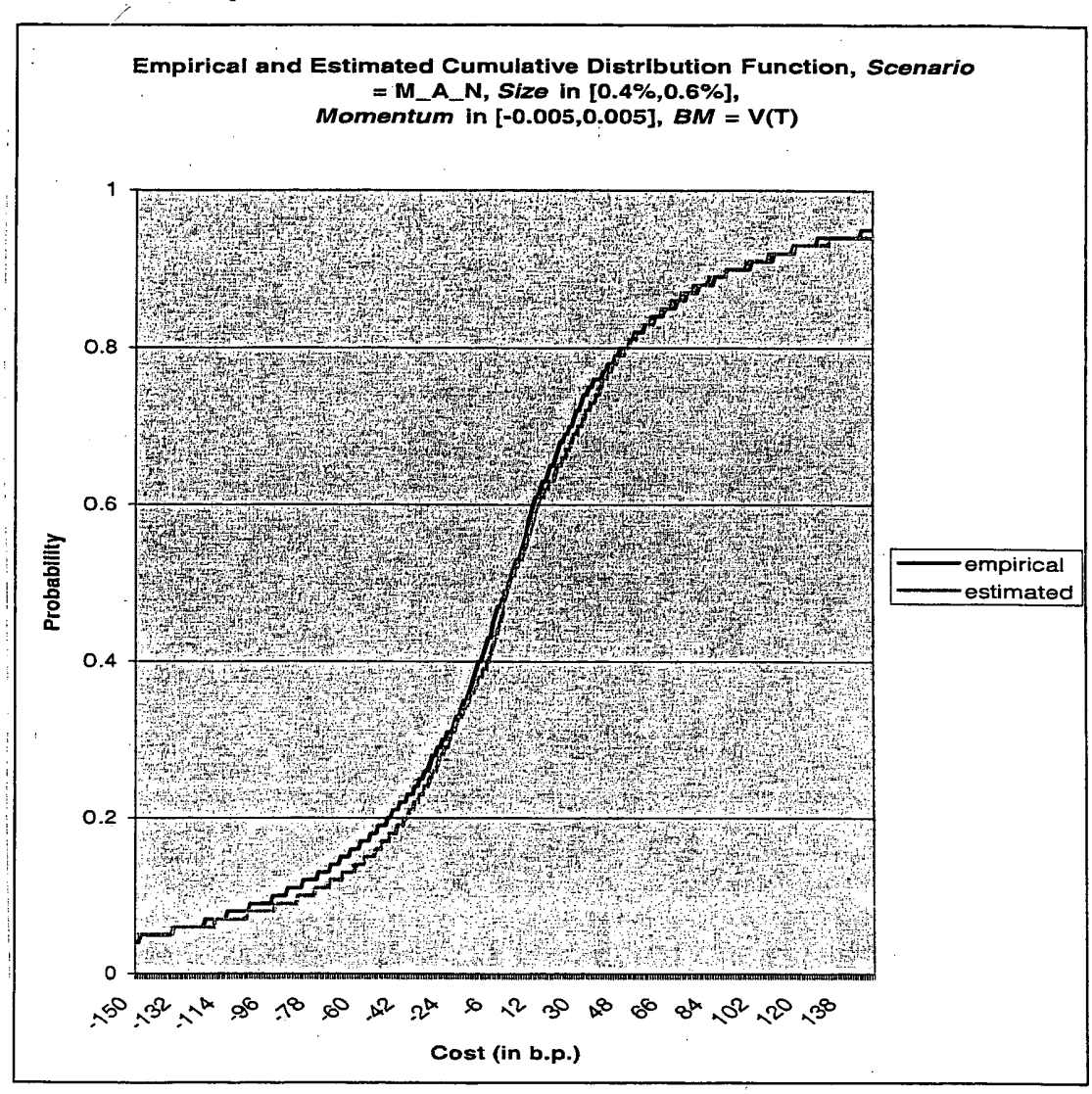
Empirical and Estimated Cumulative Distribution Function, Scenario = M_A_N, Size in [0.4%,0.6%], Momentum in [-0.005,0.005], BM = V(T)
Probability
1
0.8
0.6
0.4
0.2
0
-150
-132
-114
-96
-78
-60
-42
-24
-6
12
30
48
66
84
102
120
138
Cost (in b.p.)
empirical
estimated

Fig. 13

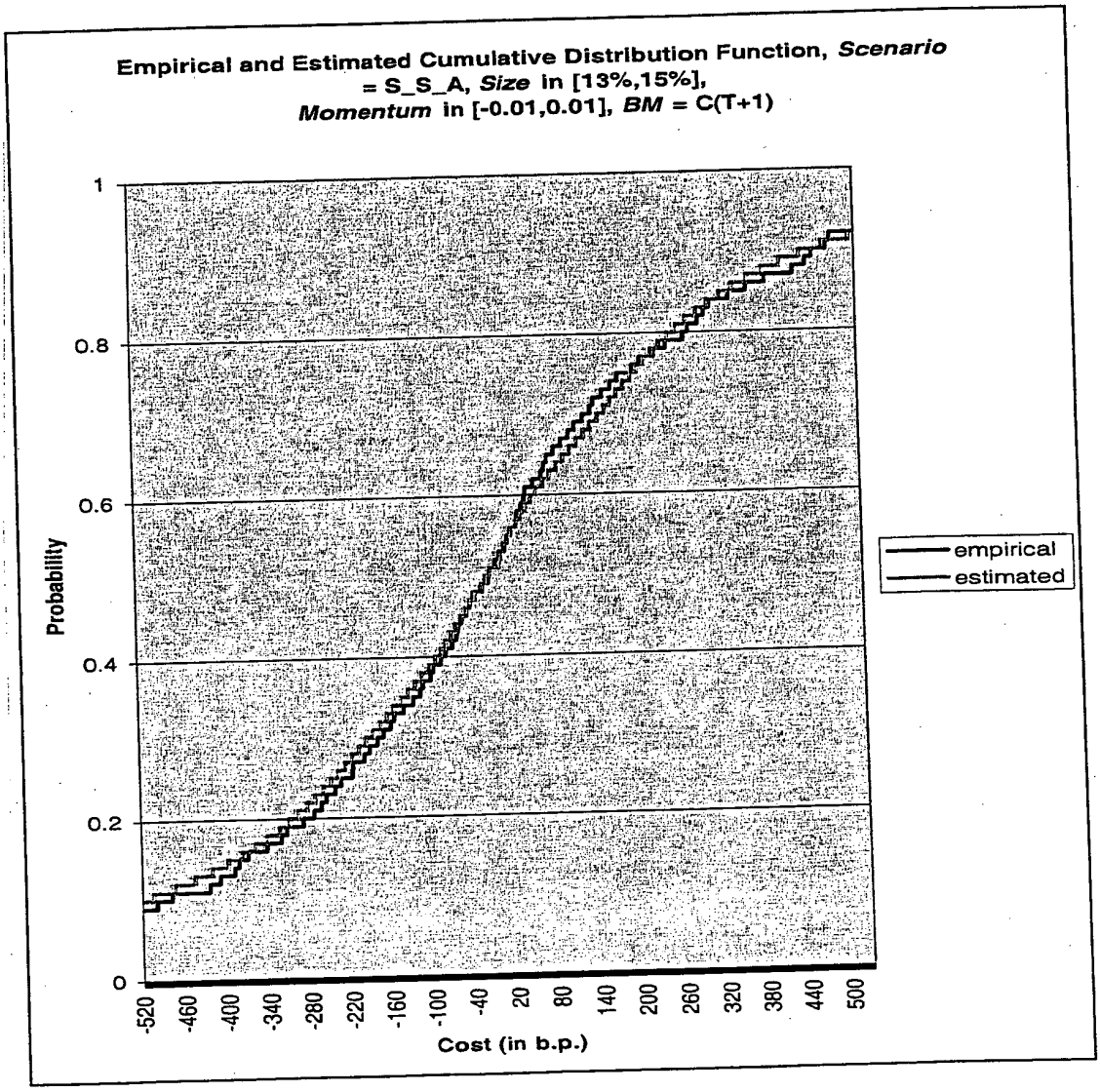
Empirical and Estimated Cumulative Distribution Function, Scenario = S_S_A, Size in [13%,15%], Momentum in [-0.01,0.01], BM = C(T+1)
Probability
1
0.8
0.6
0.4
0.2
0
-520
-460
-400
-340
-280
-220
-160
-100
-40
20
80
140
200
260
320
380
440
500
Cost (in b.p.)
empirical
estimated

Fig. 14

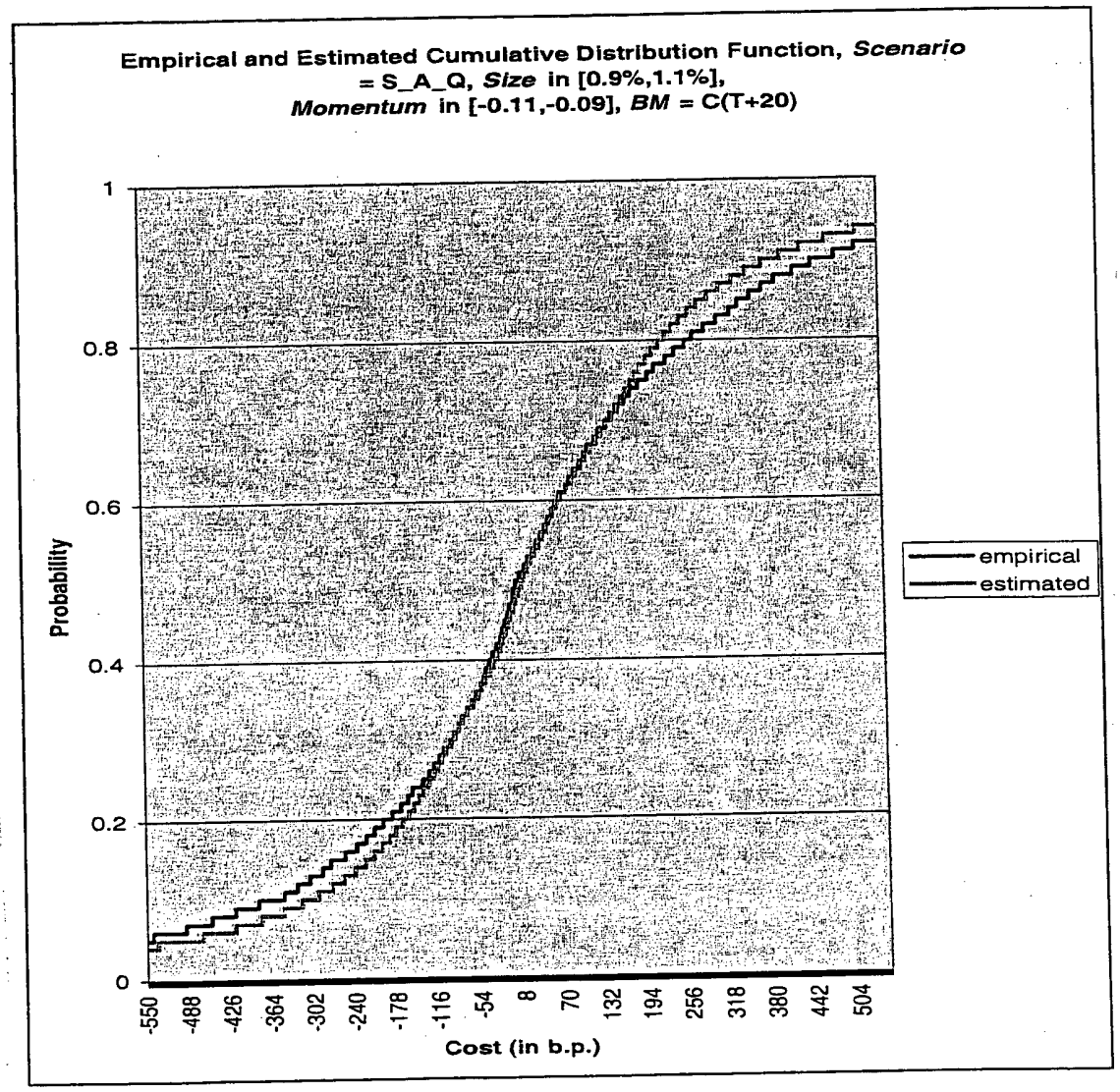
Empirical and Estimated Cumulative Distribution Function, Scenario = S_A_Q, Size in [0.9%,1.1%], Momentum in [-0.11,-0.09], BM = C(T+20)
Probability
1
0.8
0.6
0.4
0.2
0
-550
-488
-426
-364
-302
-240
-178
-116
-54
8
70
132
194
256
318
380
442
504
Cost (in b.p.)
empirical
estimated

Fig. 15

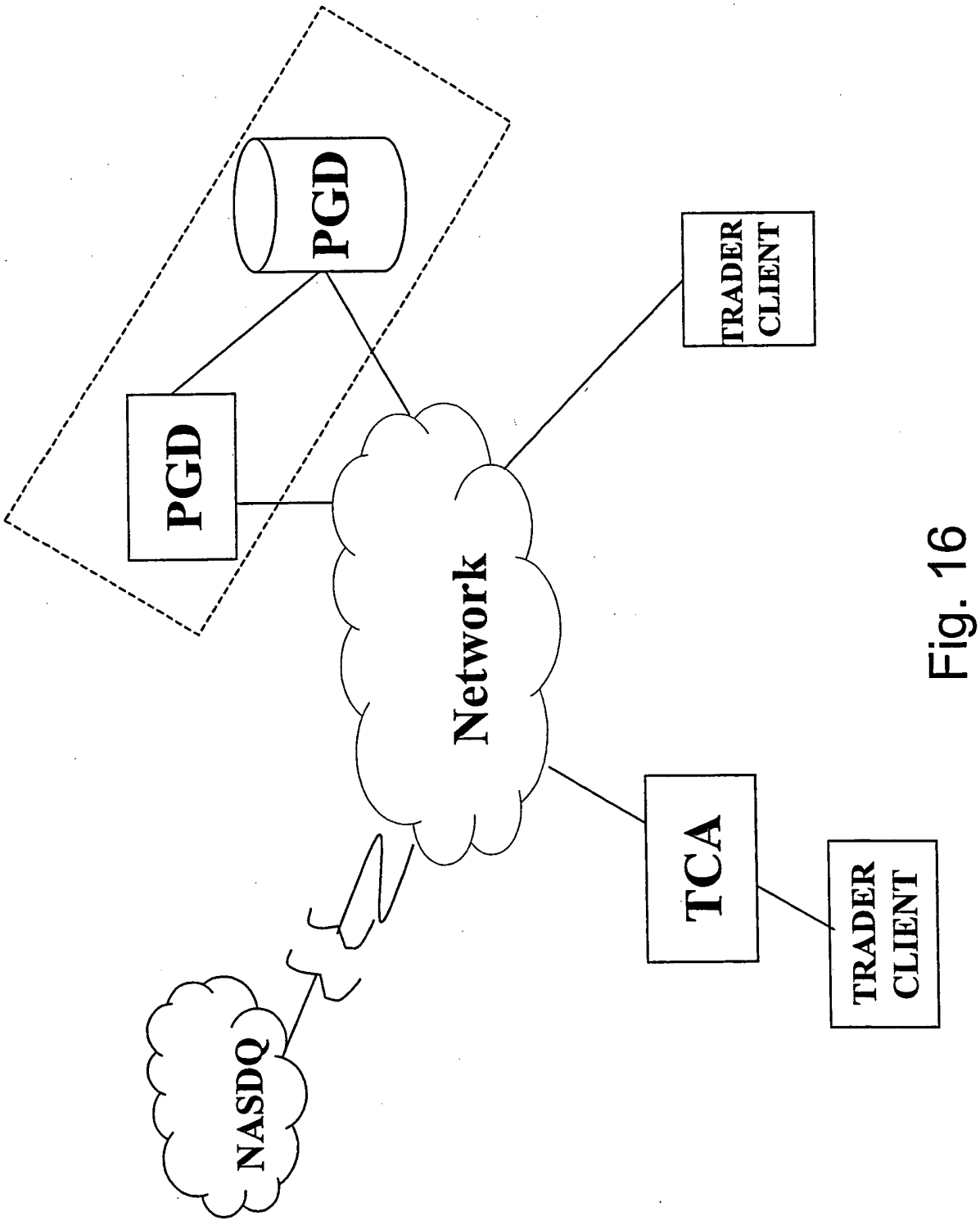

Fig. 16

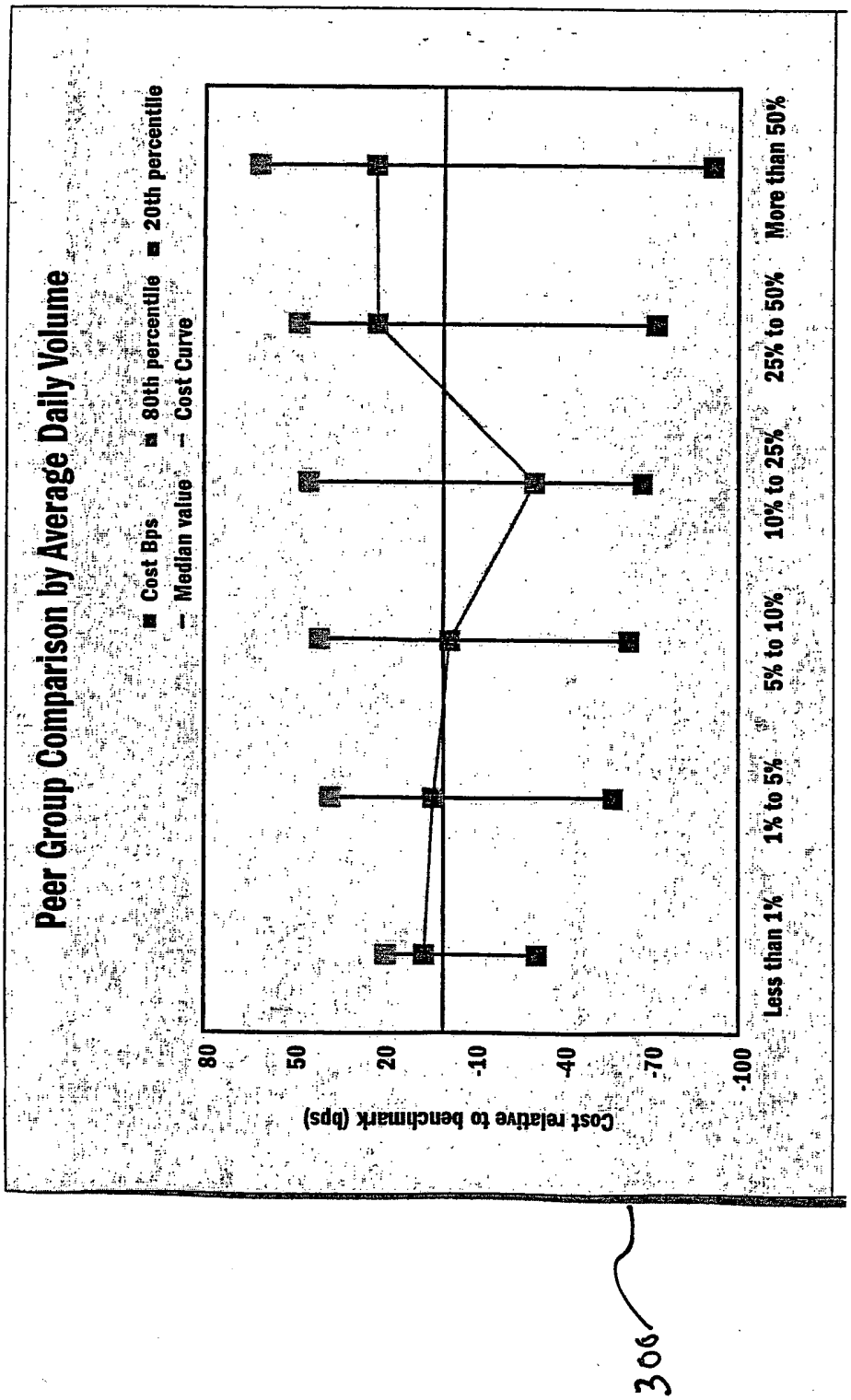
Peer Group Comparison by Average Daily Volume
Cost Bps
80th percentile
20th percentile
Median value
Cost Curve
Cost relative to benchmark (bps)
80
50
20
-10
-40
-70
-100
Less than 1%
1% to 5%
5% to 10%
10% to 25%
25% to 50%
More than 50%
306

Fig. 17